



**Calhoun: The NPS Institutional Archive**  
**DSpace Repository**

---

Institutional Publications

U.S. Naval Postgraduate School Faculty Bulletin, 1966-1978

---

1972-05-01

# Naval Postgraduate School Faculty Bulletin, 1972-05-01

Monterey, California, Naval Postgraduate School

---

<http://hdl.handle.net/10945/57591>

---

This publication is a work of the U.S. Government as defined in Title 17, United States Code, Section 101. Copyright protection is not available for this work in the United States.

*Downloaded from NPS Archive: Calhoun*



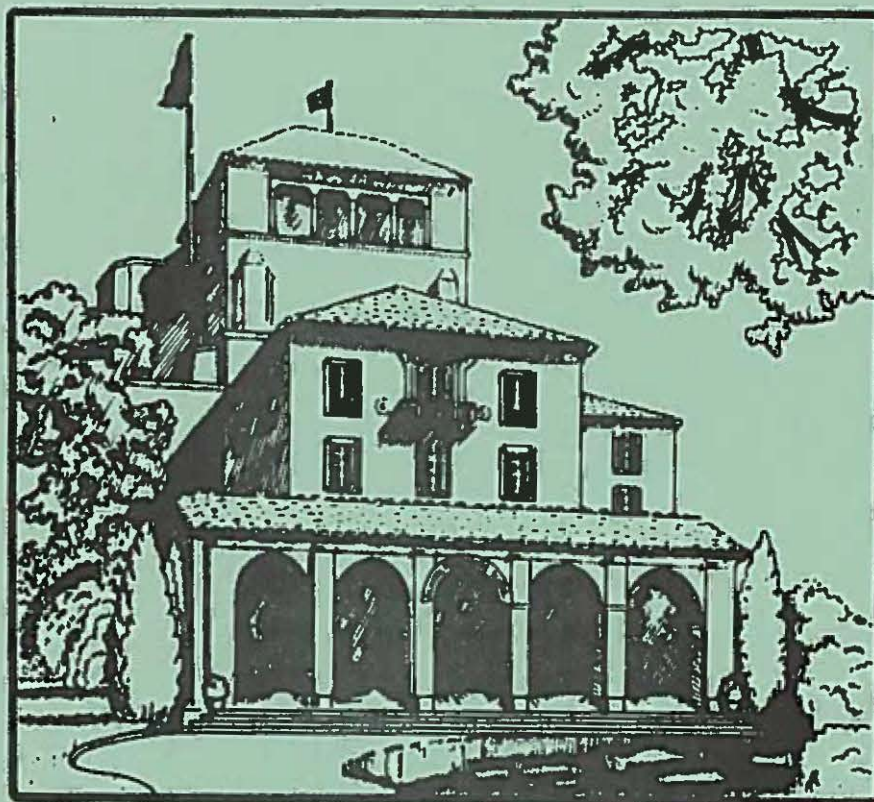
Calhoun is the Naval Postgraduate School's public access digital repository for research materials and institutional publications created by the NPS community. Calhoun is named for Professor of Mathematics Guy K. Calhoun, NPS's first appointed -- and published -- scholarly author.

**Dudley Knox Library / Naval Postgraduate School**  
**411 Dyer Road / 1 University Circle**  
**Monterey, California USA 93943**

<http://www.nps.edu/library>

U68

~~2124~~  
~~2126~~  
~~2124~~  
~~2125~~  
~~0215~~



Naval Postgraduate School

## FACULTY BULLETIN

ISSUE NO. 5-72

1 May 1972

### NEW CHAIRMAN OF MATHEMATICS DEPARTMENT

Provost Clauser has announced the appointment of Professor W. Max Woods as Chairman of the Mathematics Department, replacing Professor R. E. Gaskell, on 1 July 1972.

LIBRARY  
POSTGRADUATE  
SCHOOL  
MAY 1 1972  
MONTEREY  
CALIF 93940

## FACULTY PROMOTIONS

It is a pleasure to announce the promotions, which will become effective with the start of the next academic year.

### a. Promotion to Full Professor:

ASOP H. A. Titus	Dept. of Electrical Engineering
ASOP K. H. Woehler	Dept. of Physics

### b. Promotion to Associate Professor:

ASTP N. E. Boston	Dept. of Oceanography
ASTP R. L. Elsberry	Dept. of Meteorology
ASTP T. M. Houlihan	Dept. of Mechanical Engineering
ASTP M. D. Kelleher	Dept. of Mechanical Engineering
ASTP D. W. Netzer	Dept. of Aeronautics
ASTP J. G. Taylor	Dept. of Operations Res. & Adm. Sci.
ASTP T. Williamson	Dept. of Physics
ASTP H. M. Puscheck	Navy Management Systems Center

### c. Promotion to Assistant Professor:

INST C. H. Bassett	Dept. of Oceanography
INST J. J. Branson	Aviation Safety Programs
INST W. C. Knodle	Dept. of Oceanography

Following members of the Faculty will be given tenure:

ASOP R. E. Ball	Dept. of Aeronautics
ASOP J. E. Dawson	Navy Management Systems Center
ASOP G. H. Lindsey	Dept. of Aeronautics
ASOP P. J. Marto	Dept. of Mechanical Engineering
ASOP W. A. Mauer	Navy Management Systems Center
ASOP J. C. Nielsen	Aviation Safety Programs
ASOP R. H. Nunn	Dept. of Mechanical Engineering
ASOP C. F. Rowell	Material Science & Chemistry Dept.
ASOP R. H. Stolfi	Dept. of Government & Humanities
ASOP C. O. Wilde	Dept. of Mathematics



## PROFESSIONAL ACTIVITIES

Professor T. Sarpkaya, Department of Mechanical Engineering, has been named an Outstanding Educator of America and so listed in the 1972 issue of the Outstanding Educators of America. Professor Sarpkaya is currently on sabbatical leave at the Aerodynamische Versuchsanstalt Gottingen.

Professor N. F. Schneidewind of the Operations Research and Administrative Sciences Department presented a paper entitled "A Cost Effectiveness Model for Evaluating and Selecting Navy Instructional Methods," at the XIX International Meeting of the Institute of Management Sciences in Houston, Texas, on 5 April 1972.

Associate Professor Donald M. Layton of the Department of Aeronautics spoke to the San Francisco Chapter of the ASME at the Engineers Club in San Francisco on Thursday, 20 April on "Ships of the Future and NPS Research in Captive Air Bubble Boats."

Dean W. F. Koehler, Dean of Programs, represented the Naval Postgraduate School at the inauguration of Albert H. Bowker as Chancellor of the University of California at Berkeley on April 6, 1972. The main speaker for this event was Captain Jacques-Yves Cousteau. The thesis of Captain Cousteau's address included the following points:

- a. Technology for survival of the human race is available but cannot be effectively implemented until the social revolution eliminates the industrial societies' concepts of Nationalism, economics and politics.
- b. New concepts in a "stable society" are urgently needed to stop the population explosion, using the oceans as a universal sewer system, and hunting as a sport on land and in the sea.
- c. To demonstrate urgency he stated that the resources of the spaceship called "Earth" can support only 600 million people with a standard of living equivalent to the current USA standard, and that by the year 2040 the earth's population will be at least 16 billion unless the new concepts of the stable society are generated and implemented.

## FACULTY PUBLICATIONS

Ball, R. E. and Citerley, R. L.

Nonlinear Seismic Response of a Reinforced Concrete Nuclear Reactor Containment Vessel. Nuclear Engineering and Design 17 (1971), pp. 341-344.

Abstract: This paper examines the geometrically nonlinear, dynamic response of a reinforced concrete shell of revolution subjected to a horizontal acceleration at the base. The results from a numerical example indicate that the nonlinear effects are negligible and motion in the ovalling mode of the vessel is insignificant.

Coppens, A. B., Sanders, J. V. and Winn, J.

Infinitesimal and finite-amplitude effects in a real duct. Journal of Acoustical Society of America, Vol. 51, No. 1 (Part 1) 1972, p. 154.

Vavra, M. H., J. E. Hammer, L. E. Bell

Spin Test of Turbine Rotor. Report No. NASA CR-1967. Feb 1972. National Aeronautics and Space Administration, Wash. D. C. 20546.

Abstract: This report presents experimental data of the tangential and radial stresses in the disks of the 36,000 hp, 4000 rpm turbine for the M-1 Engine Oxidizer Turbopump. The two-stage Curtis turbine is a special light-weight design utilizing thin conical disks with hollow sheet-metal blades attached by electron-beam welding techniques. The turbine was fabricated from Inconel 718, a nickel-chromium alloy. The stresses were obtained by strain-gage measurements using a slip-ring assembly to transmit the electrical signals. Measurements were made at different rotative speeds and different thermal loads. In addition to presenting test data, the report describes test equipment, design of associated hardware, test procedures, instrumentation, and tests for the selection and calibration of strain gages.



# FACULTY COUNCIL MEMBERSHIP for 1971-72

Faculty Chairman: W.M. Woods 55Wo, 2383

Secretary of the Faculty: A.F. Andrus 55As, 2350 (73)

Executive Board: A.F. Andrus 55As, 2350  
C.H. Rothauge 52Rt, 2114  
A. Sheingold 52Sh, 2638  
W.M. Tolles 5417, 2332  
C.O. Wilde 53Wm, 2037  
W.M. Woods 55Wo, 2383

Faculty Representatives:			(Term expires)
J.E. Brock	59Bc, 2586		(72)
D.C. Williams	0211, 2572		(72)
A. Sheingold	52Sh, 2683		(73)
W.M. Woods	55Wo, 2383		(73)
C. Comstock	53Zk, 2184		(74)
W.M. Tolles	5417, 2332		(74)

## Department Representatives

	Representative	Alternate	
51 Meteorology	R.L. Alberty, 51Al, 2516;	C.L. Taylor, 51Ta, 2516	(73)
52 Electrical Engineering	C.H. Rothauge, 52Rt, 2114;	A. Gerba, 52Gz, 2115	(73)
53 Mathematics	C.O. Wilde, 53Wm, 2037;	M.D. Weir, 53Wc, 2608	(74)
54 Mat. Sci. & Chem.	M.F. Reynolds, 5412, 2107;	J.R. Clark, 5403, 2551	(72)
55 Operations Research & Admn. Sciences	H.J. Zweig, 55Zw, 2360; L. Darbyshire, 55Da, 2768;	R.H. Shudde, 55Su, 2473 N.K. Womer, 55Wr, 2607	(73) (72)
56 Gov. & Humanities	B.B. Gabel, 56Gb, 2521;	S. Gottschalk, 56Gg, 2521	(74)
57 Aeronautics	D.M. Layton, 57Ln, 2171;	T.H. Gawain, 57Gn, 2312	(72)
58 Oceanography	E.B. Thornton, 58Tm, 2552;	R.S. Andrews, 58Ad, 2552	(74)
59 Mechanical Engineering	R.E. Newton, 59Ne, 2586;	R.W. Prowell, 59Pr, 2586	(73)
61 Physics	K.E. Woehler, 61Wh, 2029;	D.E. Harrison, 61Hx, 2397	(74)
64 Navy Man. Sys. Cen.	I.W. Ulrey, 6406, 2307;	N. Plotkin, 6414, 2307	(72)

## Chairmen of Standing Committees

Faculty Status	R.R. Read, 55Re, 2382
Professional Practices	D.J. Collins, 57Co, 2312
Scholarship	C.R. Jones, 55Js, 2594
Research	P.R. Milch, 55Mh, 2741
Special Functions	J.P. Pierce, 53Pi, 2774
Retirement & Insurance	J.D. Riffin, 61Rg, 2185
Plans & Facilities	M.D. Kelleher, 59Kk, 2416
Nominating	G.H. Lindsey, 57Li, 2312
Computer Facilities	G.D. Gibbons, 53Gp, 2735

## DISTINGUISHED VISITORS

Professor E. J. Waller, Chairman, Systems Engineering Department, U. S. Naval Academy, visited Naval Postgraduate School on 17 and 18 April. Professor Waller participated in discussions of the Naval Academy Systems Engineering undergraduate degree program and its interface with the graduate program at the NPS.

Admiral Celal Eyiceoglu, Commander in Chief, Turkish Navy, participated in a tour and briefing on the Naval Postgraduate School on 15 April 1972.

The annual Meteorology Program Review was conducted on 17-20 April by a team of four Naval Officers headed by Captain R. M. Cassidy, USN, Commander, Naval Weather Service Command.

Colonel Nguyen Quy Toan, ARVN, Director of Vietnamese Combat Development Test Center, visited the Naval Postgraduate School on 17 April to discuss the Operations Research/Systems Analysis Curriculum.

RADM Carl W. Holmquist, USN, Chief of Naval Research and RADM Rupert S. Miller, USN, Assistant Commander for Research and Development, NAVAIRSYSCOM, AIR-03, visited the Naval Postgraduate School on 11 and 12 April. The Admirals participated in a briefing and discussions on the Aeronautical Engineering Curriculum.



## RESEARCH AWARDS

The following is a list of sponsored research funds received by the Naval Post-graduate School during the period 1 March through 31 March 1972. The projects indicated by asterisks are continuations of existing programs.

<u>Source</u>	<u>Amount</u>	<u>Title</u>	<u>Principal Investigator</u>
Naval Ship Systems Command Washington, D. C.	\$ 4,250	Decision Models for Planning Allocations of Sewage Systems to the Naval Fleet	Asst Prof E. A. Brill Operations Research and Administrative Science
Naval Weapons Center China Lake, Calif.	3,500	*Flow Studies of Axisymmetric Bodies	Assoc Prof R. H. Nunn Mechanical Engineering
Naval Weapons Center China Lake, Calif.	2,000	IPD/TAS Technical Review	Assoc Prof H. A. Titus Electrical Engineering
Naval Electronics Laboratory Center San Diego, Calif.	16,875	Message Center Studies	Assoc Prof H. J. Zweig Asst Prof R. W. Butterworth Operations Research and Administrative Science
Naval Weapons Center China Lake, Calif.	25,000	*Magnetic and Electric Single-Particle Susceptibility	Assoc Prof W. M. Tolles Mat. Sci. & Chemistry Assoc Prof G. E. Schacher Assoc Prof W. Reese Physics
Chief of Naval Research Arlington, Virginia	24,000	*Numerical Modeling Experiment of the Arctic Ocean	Asst Prof J. A. Galt Oceanography
Strategic Systems Project Office Washington, D. C.	\$ 5,000	*Fleet Ballistic Missile Weapons System Quality Assurance	Prof W. M. Woods Operations Research and Administrative Science
Naval Research Laboratory Washington, D. C.	7,000	Research in Electro-Optics	Prof E. C. Crittenden Physics
Naval Ship Systems Command Washington, D. C.	6,500	NAVSHIPS/NPS Faculty Liaison Program	Assoc Prof P. J. Marto Mechanical Engineering
Naval Air Systems Command Washington, D. C.	7,500	Development of AADC Course	Asst Prof G. H. Syms Mathematics



# TRAVEL ORDERS WRITTEN 1 APRIL - 23 APRIL

## Supported by Research Funds:

Shreeve, R.P.	3/29-3/30	S Fran	ASME Gas Turbine Conf.
Zeleny, W.B.	5/6-6/17	Bangkok	ARPA Program; instruct Thai officer students
Platzer, M.F.	4/10-4/15	San Antonio	Present paper at AIAA/ASME/ Atlanta SAE Mtg; discuss research at Indianapolis Georgia Inst of Tech & Allison Co.
Kirk, D. E.	4/6-4/8	China	Briefings on AGILE missile.
Titus, H.A.	4/6-4/8	Lake	
Ward, J.R.	4/6-4/8		
Rowell, C.F.	4/12-4/16	Wash D.C.	Report on research.
Borsting, J.R.	4/7-4/13	Boston	Att. conf on Modelling & Res. in Manpower & Personnel.
Eller, A.I.	4/17-4/21	Buffalo	Att. Acoustical Society Mtg.
Medwin, H.	4/17-4/29	Buffalo	Present paper at Acoustical Society of America Mtg;
		New London	
		Wash DC	Discuss research.
Miller, J.A.	4/10-4/11	Moffett Field	Conference with U.S. Army Air Lab personnel.
Poock, G.K.	4/11-4/12	SDiego	Visit NELC.
Schrady, D.A.	5/7-6/25	Bangkok	Tutor Thai Military Officers.
Tolles, W.M.	4/16-4/19	China Lake	Consultation.
Barksdale, G.L.	4/23-4/28	Ann Arbor	Consultation with research sponsors
		Wash DC	
		Madison.	
Schrady, D.A.	4/25-4/29	New Orleans	Att. 41st National Mtg of ORSA.

Hynes, J. P.	4/23-4/29	Wash, D. C.	Consultation on Naval Supply Research.
Shorb, A. M. Gibbons, G. D.	5/1-7/1	SDiego	Research contract
Sovereign, M. G.	7/1-9/3	WashDC	Discuss & att. conf concerning Naval Research w/OP96&CNA.
Davidson, K. L.	4/3-4/7	SDiego	Discussions at Scripps Inst. of Oceanography.
Gaver, D. P.	4/25-4/29	New Orleans	Present paper at 41st National Meeting of ORSA.
Githens, W. H.	4/25-5/1	Portland SDiego	Present paper at Western Psychological Association mtg; consult with Naval Personnel Training Research Lab.
Powers, M. V.	4/23-4/26	SDiego	Consult w/NELC on research project.
Sovereign, M. G.	5/1-5/27	WashDC	Work with PMS-399 on Patrol Frigate Project.
<u>Supported by BuPers Funds:</u>			
Rahe, G. A.	4/4-4/7	Norfolk	Discuss w/COMASWLANT research.
Parker, S. R.	4/15-4/30	PaloAlto LosAngeles Tucson SouthBend	IEEE Presentation on Digital Filters; present paper at and chair 1972 International Symp. on Circuit Theory; att. Frontiers on Education Mtg; present paper at Notre Dame Univ.
Myers, H. L.	4/15-4/16	MenloPark	Att. course on "Digital Filters" presented by IEEE Circuit Theory Group.
Gibbons, G. D.	4/4-4/5	SDiego	Att. Mtg at NELC.
Elster, R. S.	4/17-4/21	Denver	Present paper to 3rd Annual Air Force Symposium.
Chan, S. G.	4/17-4/22	LA	Present paper at 1972 Int'l Symp on Circuit Theory.
Githens, W. H.	4/17-4/21	Colorado 9 Springs	Present paper at 3rd Ann. Air Air Force Symposium.



Powers, J. P.	4/9-4/14	Santa Barbara	Att. 4th Int'l Symp on Acoustical Holography & present paper.
Sackman, G. L.			
Marto, P. J.	4/23-4/27	Tucson	Att. IEEE-ASEE 1972 Conf on Frontiers in Education.
Sheingold, A.	4/18-4/22	LA	Att. 1972 Int'l Symp on Circuit Theory.
Lewis, P. A. W.	4/11-4/13	Palo Alto	Give seminar at Berkeley Statistics Department.
Cooper, J. N.	4/22-4/26	WashDC NYC	Att. American Physical Society Mtg; visit Niels Bohn Library.
Zucker, R. D.	4/14-4/16	Burbank	Att. Exec. Comm Mtg & Spring Mtg of Pacific SW Section ASEE.
Williams, D. G.	4/13-4/16	Tucson	Att. conf for directors of large computer centers in western univ.
Wilson, O. B. Jr.	4/22-4/25	Tucson	Att IEEE-ASEE 1972 Conf on Frontiers in Education.
Kirk, D. E.	4/23-4/27	"	
Myers, H. L.	4/18-4/22	LA	Att. 1972 Int'l Symp on Circuit Theory.
Richards, F. R.	4/25-4/29	New Orleans	Present paper at 41st National Mtg of ORSA ; att. mtg.
Marshall, K. T.	4/25-4/29		
Borsting, J. R.	4/25-4/29		
McMasters, A. W.	4/25-4/29		
Raike, W. M.	4/25-4/30	&	
Washburn, A. R.	4/25-5/3	China Lake	Discuss OA and research.
Dally, E. B.	4/23-4/30	WashDC Oxford Butavia Ill	Att. American Physical Society Mtg; visit Miami U. ; visit Nat'l Accelerator Lab.
Hamilton, H. D.	5/1-5/5	Portland	Present paper at the 4th Nat'l Conf on Weather Analysis & Forecasting. Participate in Mtg.
Renard, R. J.	5/1-5/5	"	
Martin, F. L.	5/1-5/5	"	
Geist, J.	4/15-4/16	Menlo Pk	Att. course in Digital Filters at SLAC.
Bach, R.	4/15-4/16	"	
Taylor, C. L.	5/4-5/11	WashDC	NPS Rep to Ann mtg of Meteor. & Oceano. Eqpmnt Tech. Liaison Ofcrs, NAESU & Navy Sup Pers.

Crittenden, E. C.	4/24-4/28	WashDC	Att. DOD Laser Conf.
Fremgen, J. M. Barden, R. S.	5/6-5/7	Hayward	Mtg dealing w/current develop- ments in accounting res & educ.
Wible, L. C.	4/27-4/29	Alameda	Aviation Safety Survey.
Koehler, W. F.	6/17-8/1	Cambridge	Att. Inst for Educational Mgmt at Harvard Graduate School of Business.
Wible, L. C.	4/30-5/6	Norfolk WashDC StLouis	Liaison visit with Naval Safety Center; liaison with CMC; up- dating on F-4 aircraft.
<u>No cost to the Government:</u>			
Netzer, D. W.	4/11-4/12	Sunnyvale	Discuss solid fuel ramjet work at United Tech. Center.
Ault, DA	4/8-4/9	SFran	Att. ACM Northwest Regional Spring Symp.
Dally, E. B.	4/14-5/14	Stanford	Intermittent trips to Stanford Linear Accelerator to perform research.
Tao, T. F.	4/18-4/22	LA	Give lectures at UCLA.
Fremgen, J. M.	5/31-6/1	Stanford	Lecture & group discussion on report of Wheat Study Group on Establishment of Accounting Principles.
Eller, A. I.	4/25-10/1	WashDC	Research at NRL



